



Material Data Sheet

907

Copper-Tin (Tin Bronze)

Chemical Composition
(% max, unless shown as range or min.)

	Cu*	Sn	Pb	Zn	Fe	Sb	Ni	S	P	Al	Si	Mn
Min/Max	88.0-90.0	10.0-12.0	.50	.50	.15	.20	.50	.05	.30	.005	.005	-
Nominal	89.0	11.0	-	-	-	-	-	-	-	-	-	-

*Cu + Sum of Named Elements, 99.4% min.
In determining Cu min., Cu may be calculated as Cu + Ni

Applicable Specifications

Process or Ingot	Specification
Sand	ASTM B 427 SAE J461, J462

Fabrication Practices

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Fair

Physical Properties

	US Customary	Metric
Melting Point - Liquidus	1830 F	999 C
Melting Point - Solidus	1528 F	831 C
Density	0.317 lb/in ³ @ 68 F	8.77 gm/cm ³ @ 20 C
Specific Gravity	8.77	8.77
Electrical Resistivity	107.4 ohms-cmil/ft @ 68 F	17.86 microhm-cm @ 20 C
Electrical Conductivity	10 %IACS @ 68 F	0.056 MegaSiemens/cm @ 20 C
Thermal Conductivity	40.8 Btu · ft/(hr · ft ² · °F) at 68F	70.6 W/m · °K at 20 C
Coefficient of Thermal Expansion	10.2 · 10 ⁻⁶ per °F (68-392 F)	18.4 · 10 ⁻⁶ per °C (20-200 C)
Specific Heat Capacity	0.09 Btu/lb/°F at 68 F	377.1 J/kg · °K at 293 K
Modulus of Elasticity in Tension	15000 ksi	103400 MPa
Magnetic Permeability	1.0	1.0

Heat Treatment

Stress Relieving:
500° F (260C) for 1h/in. of Section Thickness

Cannot be strengthened by heat treatment

Machinability Rating: 20
(C36000, Free Cutting Brass = 100)

Typical Uses:
Bearings and Bushings
Gears
Worm Wheels

Mechanical Properties

		US Customary	Metric	Applicable Specification
Tensile Strength	Minimum	35 ksi	241 MPa	ASTM B 427
	Minimum	35 ksi	240 MPa	SAE J462-A
	Typical	44 ksi	303 MPa	
Yield Strength (0.5% Ext. under load)	Minimum	17 ksi	117 MPa	ASTM B 427
	Minimum	18 ksi	125 MPa	SAE J462-A
	Typical	22 ksi	152 MPa	
Elongation	Minimum	10 %, in 2 in.	10 %, in 51 mm	ASTM B 427, SAE J462-A
	Typical	20 %, in 2 in.	20 %, in 51 mm	
Brinell Hardness (500kg load)	Minimum	65	65	ASTM B 427
	Typical	80	80	

6300 West Ridge Road, Erie, PA 16506

Phone: 814-838-8602 • Fax: 814-838-8917 • Sales@ErieBronze.com